

## Micro gas detectors

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### Abstract of EP1018647

A method of detecting a gas is provided, the use of which with a GC system permits quantitative measurement of gas compounds. The detector comprises at least a base (10), a finely tapered first electrode (12) and a second electrode (14) with a specific gap spacing arranged between the first and the second electrodes (12,14), and a third electrode (16) closely disposed near, but not directly between, the first and second electrodes (12,14). The first electrode (12) is primarily used to enhance electric field, to lower the operation potential, and to help to maintain the self-sustaining discharge; the second electrode (14) is mainly used to impress an electric potential to maintain the self-sustaining discharge; the third electrode (16) is specially designed as an ignitor to impose a high electric potential pulse to ignite the self-sustaining gas discharge. Theoretically, the detection is based on the difference in ionization characteristics between various gas molecules. To ensure the stable and reliable detection, the detector must operate in the self-sustaining gas discharge state. The ions and electrons generated by the ionization create an electric current which can be detected through electrodes (12,14,16). The changes of this electric current with gas composition is used as selective and discriminating sensing signals.

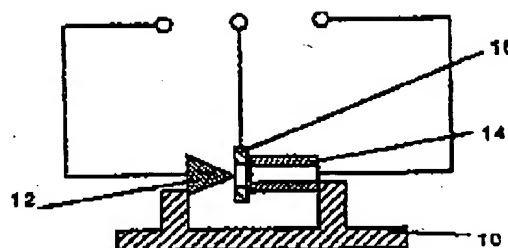


Fig. 2

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